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HYBRID WICHURAIANA ROSES.

TWO of the foremost gardeners of the United States have, during the last few years, given some attention to the so-called "memorial rose," R. Wichuraiana, a Japanese trailer, which southward often remains evergreen. It bears single white flowers in clusters. It is an immense grower, often making shoots from fifteen to twenty feet long when properly established. There is no recorded limit to its hardihood either, for, extending in its native country well to the north of China, it has here proven itself well able to withstand the climates of the upper lake regions, and will probably endure under the snow in all except very extreme climates.

It is small wonder that Mr. W. A. Manda, and Jackson Dawson should recognize in such a rose, one eminently adapted to the hybridist. The former gentleman is well known in the trade. Mr. Dawson is more of a scientist, or at any rate employed at a scientific institution, and although reported to have a number of fine seedlings, we presume they are for the use of the Arnold Arboretum.

Manda sent out his first set from his South Orange, N. J. establishment in 1897. Pink Roamer was the single rose, of a large size, with brilliant pink flowers, and a vigorous grower, well adapted as a covering plant for sun or light shade, and of great use for covering railway embankments, trailing on wire fences, and for general park and cemetery purposes. These characteristics apply to the whole set in common with the species.

Manda's Triumph is a double white flower and scented.

South Orange Perfection is double, white tipped with pink.

Universal Favorite is a double, pink flower, two and one-half inches or so across, and in New Jersey, at any rate, an immense grower, almost, if not quite, as vigorous as the singles.

These roses were crossed with those of various kinds considered perfectly hardy. They have been tested as forcing roses for Easter, and reported to be as free as Crimson Rambler. We have heard that one of the varieties is disposed to sport, but our informant could not say which one. This would seem to be an additional chance for new varieties.

Mr. Manda has been so much encouraged by his success, that he proposes to send out this year another set of select hybrids, which have been obtained by crossing forcing tea roses on Wichuraiana, and which, like that variety, are evergreen under favorable conditions—that is to say they remained evergreen last winter, a few miles from the city of New York. Having had the privilege of seeing these roses growing, it can be said that they are very beautiful creations indeed, and although we would not like to assure their hardihood and evergreen character, in Manitoba for instance, yet we believe they will be of the

greatest service for a wide section of country. Their descriptions follow:

Jersey Beauty is a cross by Perle des Jardins, a single white rose of three inches or so across, with brilliant golden stamens, with glossy evergreen foliage; an immense grower, and without the villianous thorns of the Cherokee, destined to take the place of that handsome rose in many sections northward.

Gardeniaflora—or Gardenia, as it has been more recently called—is a double white rose, with petaliferous anthers filling the center when first opening, giving the flower the aspect of Gardenia Fortunei. It also is an immense grower, but perhaps the greatest charm of this variety is its beautiful yellow buds, quite the equal of its pollen parent—Perle des Jardins.

Evergreen Gem is a double white rose with foliage of a bronzy hue, very vigorous, and a cross by Madame Hoste.

There are also several unnamed seedlings, one of which with flat, pink flowers, like the shade of pink in the well-known rose, La France, is a cross by the hybrid tea rose, Meteor.

Altogether these roses promise to be the greatest acquisitions for a variety of purposes that this country has seen in years—for there seems to be no limit to their possibilities yet in sight.

JAMES MACPHERSON.

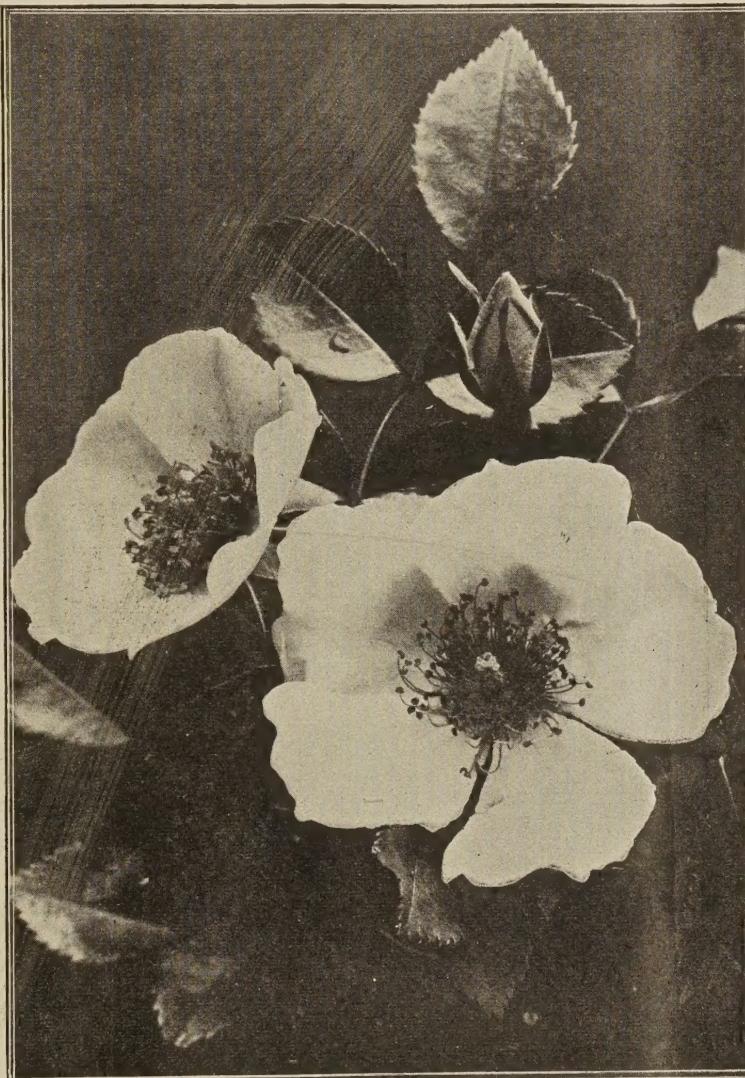
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SEED PODS.

Botany must be an unusually fascinating study in the Philippines if Acalypha Sanderi, with its grotesque trailing red tassels, is an average specimen of the plant life there.

The araucarias of Northern homes are perfect miniatures of the great balsam trees of our North Carolina mountains. Indeed I once cut a top from a young balsam; took it home, stuck it in a pot of earth, and was congratulated on the fine appearance of my araucaria. I have been wondering if these were the "mountain pines" that Rudyard Kipling used as a decoration for his Vermont window sill.

We had a good example of the degrees of hardiness among large flowering chrysanthemums this fall. The last night of October was pretty cold, but we thought the three pots of "mummies" left standing out on the porch could surely brave the temperature there. The plants did, but the great, tender, half unfolded flowers drooped sadly the next morning. George W. Childs, with flowers nearest open, recovered first and almost entirely. Its velvety crimson blooms, lighted by glints of gold, were royal. Ada Spaulding finally faced life again, but the pink and ivory flowers showed the "frost bite" by a few brown petals near the centers. Ivory, which should have been furthest advanced, was most backward with its buds, and these, being so tender, were blackened in the center, so that but two or three opened into fine flowers. Ivory had a



NEW EVERGREEN ROSE
JERSEY BEAUTY

very good excuse for being late however; it remained plunged in a sunny border perhaps a month after the other pots were lifted. Plants plunged in their pots never bloom so early for us as those kept above the sod.

It takes a long time to grow a fine palm from seed, but the work is very fascinating. The seed leaves give you no hint as to what form the mature ones will take, but gradually the "character" leaves evolve, and the plant meantime is a very interesting study.

One day early in winter a little girl called my attention to the yellow berries on a holly tree that we were passing. She could not be convinced that these berries, shading through light yellow into deep orange, did not belong to a distinct yellow-berried species of holly, and I had to close the argument by asking her to watch the berries closely for a few weeks. She now writes me that "it was only the common red-berried holly after all," and seems much disgusted with its inconstancy of color.

The best way that I know to dwarf cosmos and secure its flowers quickly is to sow the seed very late and in poor soil. The plant seems to recognize the fact that its flowers are due in October, and bloom then it must, no matter what indignities might be offered as an excuse for not blooming at all. A really dwarf cosmos is certainly needed; it does not matter so much about the early blooming feature. The great fluffy bushes lose their charm when tied up stiffly, and if left to sprawl require distance to lend enchantment. "Chaos" is the proper name for them when left *au naturel*. So now we keep our seed until mid-July and then sow it on barren, stony ground. Some plants in our cemetery, last year, from seed merely scattered over a bare place grew only about three inches high, each one bearing a blossom almost as wide.

Bulbs of almost all kinds of narcissi need to be planted very late the first year that they are taken south, else they spring up quickly and their leaves are frost bitten. Chinese narcissi never recover from this. If left in the ground they hold to the delusion that we have our spring in fall, and in a few years succumb to our "beastly American weather." The other varieties seem to get the swing of our seasons in a year or two and frequently stay below ground in fall. Planted late in November or December, their first year south, they grow and bloom decorously. A few deluded people still keep up the practice of gashing the tops of their Chinese lily bulbs "to make them show more flower stems." Did any one ever see a flower stem springing from such a wound? A perfect gush of leaves may follow, but I have yet to see an extra flower stem produced by the barbarity. Chinese lilies planted in January bloom better for me than those planted earlier or later. The pent up bloom energy is so eager to be free that the white and gold flowers are shaken out before untoward

conditions have time to injure them. But until planted keep the bulbs in a cool, dark, dry place.

L. GREENLEE.

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HINTS ON THE EASTER LILY.

BUCKS potted in August may be expected to bloom at Christmas time. Planting of bulbs late in October or early in November allows plenty of time for slow growth and for flowering by Easter time. Pots should remain in the dark at least six weeks so that roots may grow plentifully from the base of the bulbs.

The Easter or Harris lily throws out a secondary group of roots a little above the bulb, soon after stem growth is properly begun. For this reason, more soil should be heaped above the bulb from time to time till the pot is full. The first planting should be deep in the pot to allow room for the additional soil added later.

Six months will be required for the complete development of the plant from the time of planting. When first brought from the cellar a group of tips will be seen protruding from the earth. Water moderately, and gradually expose to the light. When tips turn green, increase the light but not the temperature. Slow growth, in an atmosphere moist and having a temperature ranging from fifty-five to sixty-five degrees Fahrenheit, is advised. A dry, hot atmosphere is fatal to success.

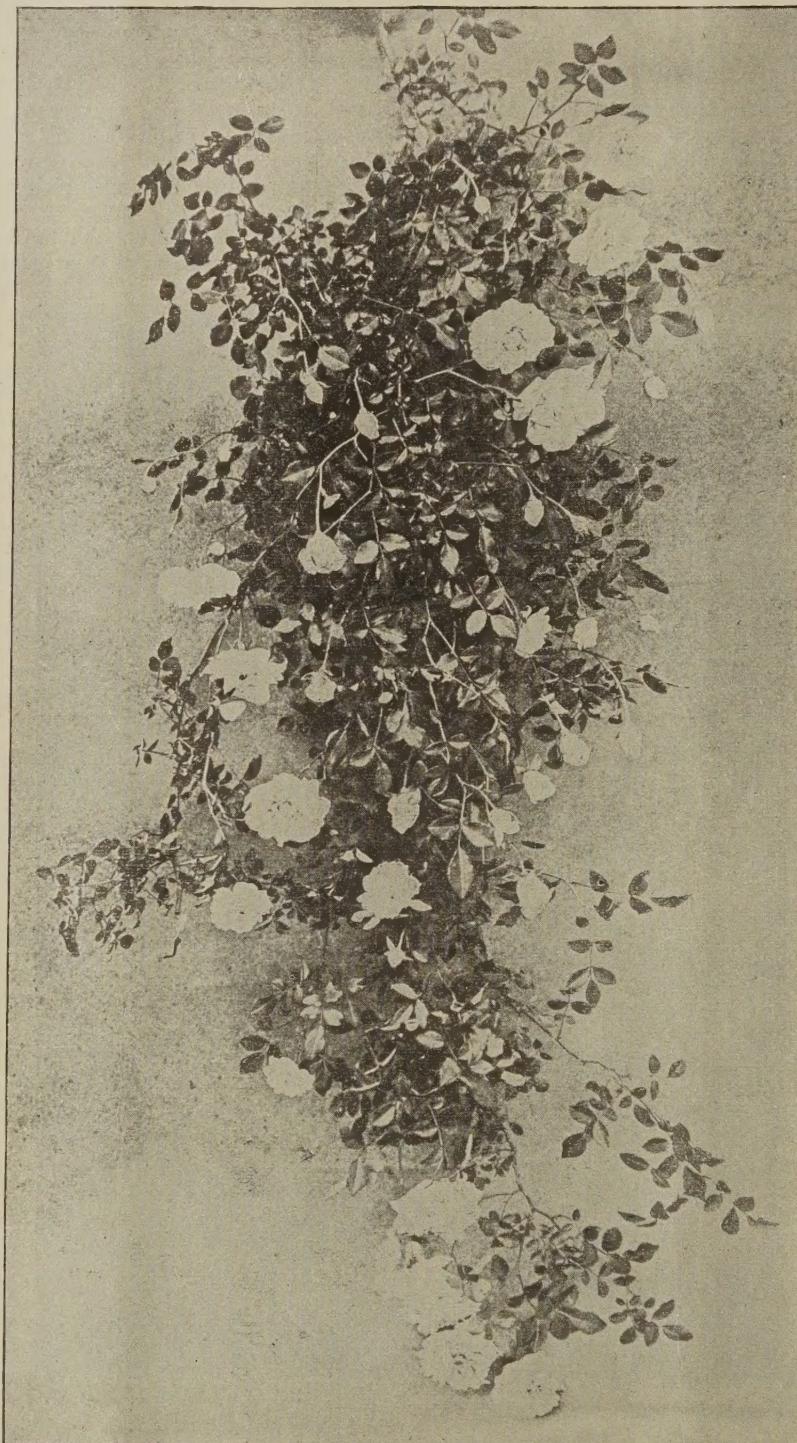
To hasten the time of bloom bring into a warmer room, increase the sunlight, and keep the air moist by allowing water to evaporate more or less constantly from a dish on the stove or register. To retard growth, when development appears too rapid and bloom probable before the desired time, set pot in cool dark room and water moderately.

If the soil is rich a profuse watering every third day will help the roots to abstract the nourishment it needs. If lacking nourishment, as may appear by weak growth, a half-pint of liquid manure should be given the plant each week or half-pint of water having in it ten drops of liquid ammonia. So large a bulb as the Easter lily is a gross feeder, and

DOUBLE WHITE ROSE
EVERGREEN GEM

appreciates any extra care. After the plant has bloomed, it should be moderately watered till the foliage turns yellow. This indicates that the bulb is ripe and ready for a period of rest. Withhold water altogether, and set pot away in some cool cellar till the following October. It is then planted out of doors and treated as other lilies. Having bloomed once in the house, it is not fit for a second forcing, but out of doors it will renew itself so as to bloom in a year or two. In the open ground it is desirable that this lily should have some protection for winter, such as afforded by two or three inches of coarse stable litter, or a thick covering of leaves.

J. F. B.



NEW HYBRID WICHURAIANA ROSES.

The most remarkable achievement and improvement of a new and distinct type of hardy roses that has been made in a generation. The growth is remarkable for its freedom, a single plant, of Jersey Beauty four years old, covers a space of 240 square feet, with long shoots, 12 to 25 feet in length, completely covering the ground with its bright glossy foliage and showy fragrant flowers. The same plant is throwing up thirty-eight new growths of remarkable strength. The foliage of all is leathery in texture, shiny, and not only proof against insects, but evergreen, that is, keeping the foliage all winter, a characteristic in roses never before obtained.

The flowers are produced most profusely, are all of large size, very fragrant, and can be easily used for cut flower purposes, as much as any greenhouse Tea roses, especially when in bud. The use of these roses will be unlimited for trailing or covering ground where nothing else will grow, to cover roots, stumps and stems of trees, walls and trellises, for cut-flower purposes, and also for forcing as pot-plants during spring,

greatest profusion, covering the plant entirely and having the appearance of a yellow Cherokee rose. Great acquisition to roses, and the most striking variety of the set.

GARDENIA (Wichuraiana X Perle des Jardins).—Strong grower, with large green foliage. Flowers produced singly on stems one-half to one foot long. When in bud hardly distinguishable from Perle, bright yellow, and when open cream color, three to three and a half inches in diameter, incurving towards evening to perfect imitation of a gardenia as to shape and color, hence its name. Flowers are delightfully fragrant and produce freely. A grand rose for any purpose. W. A. MANDA.

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CHINESE PRIMROSES.

No plants that we can grow upon our window sills have such a sunny, cheery expression as the primroses. Such warm dimples and freckles and borders of pink and crimson, such golden eyes, smiling out from blush-pink or pure white faces, such a constant brimming, bubbling,



From a Photograph

A GROUP OF PRIMROSES

especially for Easter. All the following varieties exceed any rose in either hardiness, evergreen foliage, beauty and fragrance of their flowers.

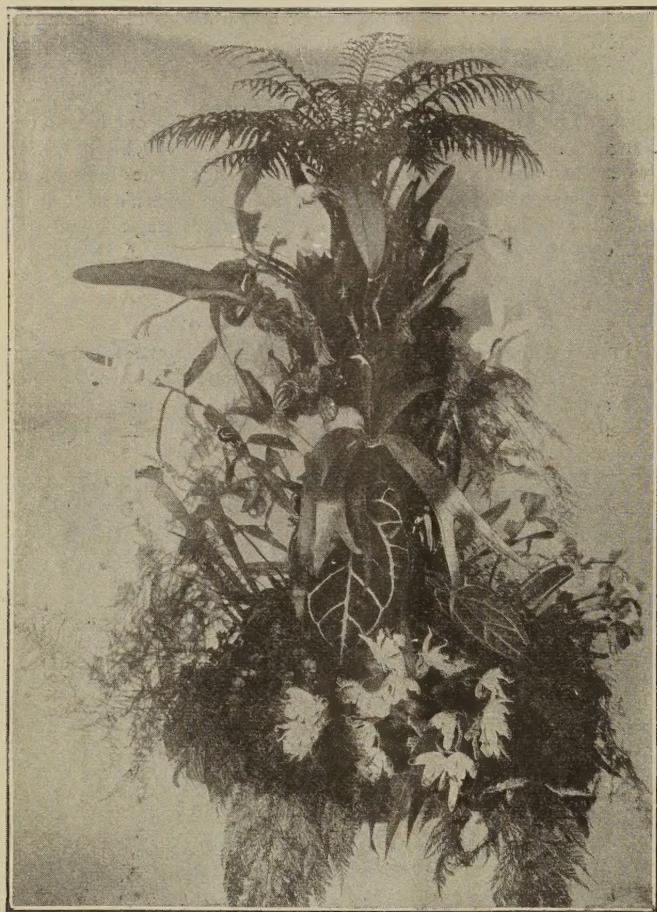
EVERGREEN GEM (Wichuraiana X Madame Hoste).—The most wonderful grower, not only evergreen, but growing during mild weather in winter. Stems long, branching, rich bronze color, covering the ground closely. Foliage, rich bronze color, closely matted. Flowers produced singly on stems, yellow, buff in bud, opening to almost white, two or three inches in diameter, perfectly double and delightful Sweetbriar fragrance. This will be found most valuable for landscape work, as well as for cut flower purposes.

JERSEY BEAUTY (Wichuraiana X Perle des Jardins).—Extremely vigorous grower, foliage of thick leathery substance, shiny flowers singly or in clusters, large, single, three inches in diameter, opening pale yellow, with clusters of bright yellow stamens, very fragrant, and produced in

frolicking over of flowers as the brave little youngsters keep up all winter. The velvety leaves, too, are lovely,—the very prettiest setting that the dainty flowers could have.

Winter primroses are so easy to grow from seed sown in June, that the plants are treated as annuals; the seed sown every year and the plants thrown away in spring when their blooming season is over. Double white varieties, which are a little more difficult to grow from seed than single ones, are sometimes summered over in some shaded place where undue moisture will not settle around the crowns and cause them to decay. All primroses should be potted high to avoid this same evil. They like a rich, light soil of sand and leaf-mould and old manure given to them in well drained pots.

It is a pleasure to wash the bright faces of the little flowers with a warm spray bath on sunny mornings, but if the sun seems to shine per-



A TALL CENTER PIECE
OF THE OLDEN TIME

flectly warm, pull the shade down till their faces and leaves are dry, else brown sun spots may appear wherever a drop of water has lodged. This precaution is necessary with all thick, velvety-leaved plants.

The tiny seedlings of the Chinese primrose require care in the processes of pricking out and repotting, but they begin soon to grow off with the same pluck and vigor that characterize their after life.

The newer varieties of primroses show flowers beautifully fringed and embroidered with different colors in odd and fanciful patterns. The leaves, too, have much beruffled edges. I am only hoping that the dear old primroses will not grow so fine and modern that I shall not know them by and by.

L. GREENLEE.

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STUDIES IN FLOWER DECORATION.

WE WHO love to arrange our own cut flowers in graceful, natural ways have reason to be thankful that the high, stiff, formal flower pieces that only a florist could properly handle are no longer in vogue. It is an open question if these were ever things of great beauty, for they were a very fleeting joy. Perfectly fresh and faultless flowers were required in their construction, while, in the loose basket and bowl arrangements of today the gleanings of the whole household, even to the toddling two-year old, may be thrust without a sense of incongruousness, provided the colors do not clash.

The two photographs will illustrate old and new ways of using cut flowers. I do not know how many hours it took the florist to construct the tall center-piece. That he was an ingenious man I am sure, from his using the small tree fern as a base of decoration. Its mossy, shaggy trunk could be saturated with moisture that would keep the stems of the flowers wired to it fresh much longer than is usual in such pieces.

The loose basket of flowers was arranged in a few moments while the customer stood by. Now and then she suggested some change that was willingly made, and when it was delivered to her man, she laughingly said, "next time I'll fill my own basket, it looks so easy."

She did keep the same basket for a whole season, filling it now and then with fresh, graceful arrangements of flowers from her own conservatory. The inside of the basket held a light zinc pan filled with sand, and over this a cushion of moss in which the stems of the flowers were inserted. The sand and moss were saturated with water and placed in the basket before any of the flowers were cut.

Those who grow cypripediums will know how long that first basketful could be kept looking fresh and sonisie. Six weeks in a cut state is a short life for a cypripedium.

In passing through private conservatories, I frequently wonder why more trouble is not taken to hide the benches, the pipes, and shelving, in short, to make the plants look less like prisoners and exiles, more like the natural ranks and festoons of flowers that they must present in their own homes.

L. GREENLEE.

HISTORY OF THE GLADIOLUS.

THE Gladiolus, sometimes called Sword Lily or Corn Flag, is a very popular plant, and has steadily advanced in favor since the first days of the gandavensis variety. About ninety original species were known, of which fifty came from the Cape of Good Hope, while the remainder were found scattered through Africa, Europe, Persia and the Levant; only one species, G. illyricus being found native in Great Britain. Among the most prominent Cape species are G. cardinalis, (red), G. psittacinus or Natalensis, (purple and yellow), and G. floribundus, (purple and white); from these species many hybrids have been produced.

It is said that G. gandavensis originated in the garden of Duke of Arenberg, a noted amateur of Ghent, in 1843. Van Houtte, who produced it, claims G. cardinalis and G. psittacinus as its parents, but Dean Herbert, another authority, claims that to be impossible and that G. gandavensis must be a cross between G. psittacinus and G. oppositiflorus.

If the gandavensis strain was really obtained from G. cardinalis, the cross must have eliminated some of the objectional features of that variety, which is a very difficult sort to keep in a dry state during winter; it is not a success except when grown in a mild climate where the bulbs can be left in the ground all the time.

The Lemoine hybrids were put on the market almost twenty years ago, and created a sensation wherever seen, for their odd combination of colors and peculiar markings. The flowers suggest some kinds of orchids in form and in the peculiar blending of the colors, and are often called the Butterfly Gladioli. They were said to be hardy when first introduced, and doubtless are, in that part of France where they originated, but here, except in the south, they must be kept dry during winter. The smallest bulbets when left in the ground often come up in the spring, but it is because they are provided with a tough husk which protects the life germ from the cold. The Lemoines have one great fault, however, most of them having such weak stems that the blossom stalks cannot hold themselves erect, but twist and curl around in a very unsatisfactory manner. To keep them straight, great care must be exercised in staking them and tying the stems to the stakes every few inches; they are so beautiful that they are worth all the extra time spent on them.



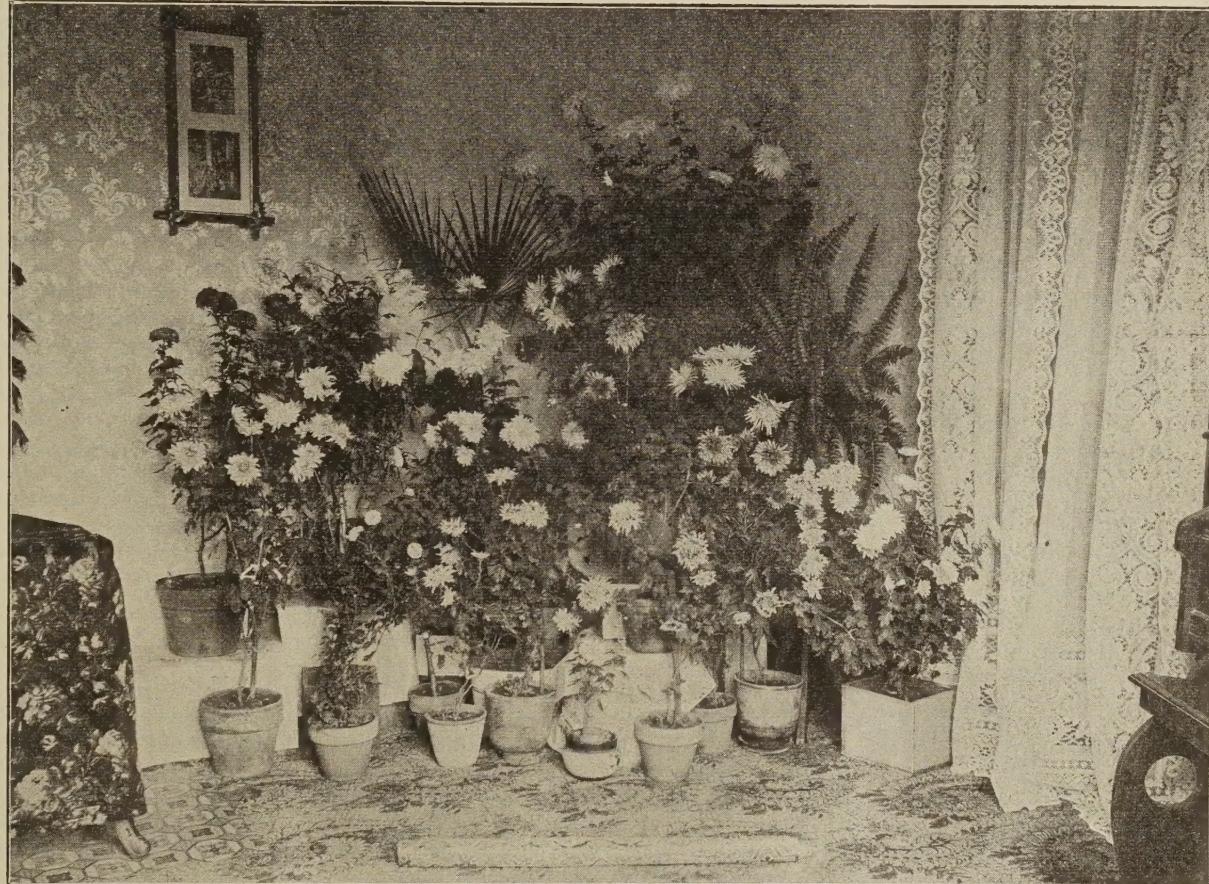
THE MODERN BASKET

Lemoine's Nanceanus, a new strain lately introduced is a cross between Lemoinei and G. Saundersoni; it has produced some large and very fine flowers, but like the Lemoine, the stalks are usually quite small and weak. They will be popular however, as the flowers are so large and showy.

The new G. Childsi introduced in 1872, was produced in Germany by Mr. Max Leichtlin, and is the result of a cross between G. gandavensis and G. Saundersoni. It is an unusually valuable sort, the size and brilliancy of the flowers being far ahead of those of any other sort. The bulbs do not multiply rapidly, so they cannot become common for some time: but they seed very freely, and many are propagated that way. The oddest colors are found in these hybrids, slaty blue, smoky gray and purple shades combined with brighter colors, making a combination not often seen in a flower.

fire, until freezing weather. There were flat flowers seven inches across, and snowy globes, and globes of red and gold, five inches in diameter.

I procure plants from a reliable florist about the first of May, or start young plants from those kept over winter in the cellar. It is a mistake which many beginners make, to retain the entire old plant. Instead of doing so plants should be made from cuttings, as many as desired, or they may be made by dividing the old roots, though this is not as well. I pot at first in small pots, three or four-inch size, or in tin cans holding a quart. I use no drainage in the small pots but the cans should have an inch of broken crockery in the bottom. For this first potting I now use only good garden soil. I have several times made the mistake of trying to start the plants in a very rich soil and have thereby lost some fine plants. The rich soil is needed in growing chrysanthemums, but not



Grown by Mrs. Sara J. Colclasure, Paoli, Ind.

CHRYSANTHEMUMS
WITHOUT A GREENHOUSE

Beside these colors there are the ordinary colors seen in the gandavensis sorts with the exception of yellow, a good yellow one of this sort not having been produced. The stalks grow very tall and rank, and have more strength and vigor than any gandavensis variety that I know of. The bulbs are very large and often grow two or three seasons without making a new bulb. Each bulb will furnish from three to seven spikes; last year I had two which furnished seven large spikes and several with five or six.

H. M. W.

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CHRYSANTHEMUMS WITHOUT A GREENHOUSE.

MANY amateurs are growing the finer varieties of chrysanthemums successfully, yet there seems to be a wide-spread opinion that they can only be grown by florists and in a greenhouse. The accompanying illustration will show what one amateur has done with only the facilities afforded by a village back yard, a roomy kitchen and a cool room. They were grown through the summer and autumn in pots and boxes kept in the sunny back yard. When frost was feared they were carried into the kitchen at night but were carried out for all the sunshine possible during the day. After the flowers were open they were kept in a room, without

in their first stages. In a short time the small pots will be filled with roots and the plants should then be shifted into others two or three sizes larger. It is more trouble to remove the plants from cans than from pots, but it may be successfully done without disturbing the roots by making them very wet, then running a case knife around inside the can. They can then be gently shaken out.

The new pots should have some drainage and enough soil below the plant to raise the top of the ball of earth within an inch of the top of the pot. I fill in around them with good soil, and water well, and they are not checked in growing, by the change. As often as the plants fill the pots with roots they are changed to others two or three sizes larger. Some of the vigorous growing varieties will require several changes and by the first of August will be in twelve or fourteen-inch pots or in boxes ten or twelve inches across and as many in depth. I find that boxes are preferable to pots in the later stages of their growth, unless the pots are shaded to prevent the heat of the sun at the roots; the plants need all the sunshine they can have to make them grow strong and stocky. For the last potting the soil can scarcely be too rich in well rotted cow manure. Pinching back should keep pace with the repotting. When my plants were six inches high the terminal buds were removed. This caused sev-

eral lateral branches to start. These were allowed to grow to a length of four or five inches when they, too, were stopped. This was kept up until the middle of July for the earlier varieties, like the Ivory and Wm. Simpson, and until the first of August for those which bloom later. Soon after this the flower buds begin to form.

The chrysanthemum must have an abundance of water, and these plants were watered regularly and copiously. Occasionally a plant would not need watering every day, but this was not often. The application of a liquid fertilizer is usually begun the first of September, but in 1898 was neglected until the last of the month. In 1896 I used the droppings from the poultry house for preparing the liquid, in 1897 a flower food obtained from a florist, and in 1898 manure from the cow stable. The results were almost equally good, and I conclude that one may use whatever is most convenient. The liquid was given the plants once a week at first, gradually increasing the frequency of its application until it was used four times a week.

The application of a liquid fertilizer of some sort is important. Even more important is the disbudding. A cluster of buds forms at the end of every branch, and a shoot bearing a flower bud starts from the axil of every leaf. The strongest bud of each cluster was allowed to remain, all others were rubbed off as soon as they were large enough to make it practicable. This treatment adds greatly to the size of the flowers, and also to their beauty.

The Ivory, for instance, may be properly cared for all through its growth, and have all the fertilizer it will bear, yet if all the buds it sets are allowed to remain, the flowers will remain flat. If but one has been left on a stem each will develop into a snowy globe that is worth half a dozen flat flowers. There is a wonderful fascination about chrysanthemum growing. The plants respond so promptly and so generously to all the extra care bestowed on them, that they seem almost consciously grateful.

SARA J. COLCLASURE.

THE HOME MAKER.

THE world is sadly in need of more home-makers. A very common cause of domestic disarrangement is a lack of discretion in the house-mother's estimate of her own strength. She plans to do in one day, the duties of three, hence night finds the household in disorder, and the wife and mother tired, cross, and nervous to such a degree that she must be let alone. To overdo is a needless tax on the mental as well as the physical state. If the probability of interruptions were considered in estimating a day's work, one might be better prepared to contend with the annoyances that attend them. Try and hold an equable temper, and to smile at hinderances and embarrassments and make the best of every cross. Oh! but isn't it hard to do? Yes, but I have seen it accomplished, and that, too, by persons whose dispositions were not perfect. More courage is necessary for the exercise of patience and composure, than what may seem to be greater virtues, but the effect of overcoming trials is important to the human character.

What a charm an even disposition sheds around and about a home. One feels it the moment the threshold is crossed. But it is almost impossible to be well balanced and keep an equilibrium, unless one is feeling well,—hence study to care for bodily health. If one has to look after the homely duties of every day life—prepare the meals, wash the dishes sweep, and do the thousand and other duties that most of the busy house mothers have to do, it should be a study to make such work as pleasant as possible—a friend of mine said she grew rebellious because of having to cook, that she grew irritable and unhappy over it—it was the after cleaning of the cooking vessels that was the most distasteful to her. She determined to take herself in hand and subdue the ugly spirit, as she termed it. She studied over the problem trying to make the work less irksome by adopting means to enabling her to do it more quickly, and also to save her hands, and not to come in contact so often with the greasy iron vessels—She made mops with long handles, and bought her a half dozen linen crash towels, and made a soap which cuts the grease, and also purifies and cleans quickly, taking about half the usual time. The soap is made thus. Dissolve three ounces of borax in two quarts of warm water, add two bars of good white soap shaved fine, and stir all together in a jar until it is melted. When cool it will form a jelly. A tablespoonful of this will make a strong lather in a gallon of water, and will be good for cleaning any iron or porcelain lined vessel. It is also excellent for washing windows and general house cleaning. She persevered in trying to overcome the dislike to cooking and cleaning, and by making the work attractive and easier saved time to devote to more pleasant pursuits. The home-maker must study to be with her family all she can. She must study to overcome petty dislikes and to learn the lesson of sweet submission to the inevitable. S. H

SOME VARIEGATED-LEAVED PLANTS.

A white flowers enliven any collection so does the plant of variegated foliage lend its aid to brighten the window garden and the veranda box. The green and white leaf is particularly pleasing and several interesting plants offer a choice and fine variety. Abutilon Savitzii, with its pretty maple-like leaves of delicate texture and form, is well worth coaxing, for it is as much less robust than the other abutilons as it is more pleasing and decorative of leaf.

That pretty glechoma, the variegated ground ivy, is a form of the old dooryard creeper, the round-leaved gill so sure to carpet the place where an old, old house has stood. I have seen it sulk and dwindle in the window, but last season found it making a very neat and effective edging in a friend's garden, each plant covering quite a bit of ground and forming a dainty spread of green and white. Like all the white leaved plants its foliage is considerably more delicate of texture than the plain green sort to which it is allied and therefore easily injured by coal gas or red spiders. I feel sure that a healthy plant kept from these destroyers would make a charming plant trailer for the window garden.

The pretty silvery leaved geranium, Madame Salleroi, which contents itself with making a mass of leaves and no blooms, is as easy of culture as it is attractive. The plants need a full share of light and resent over-crowding among other plants. I was surprised last Easter to see how many handsome specimens of this sort a single village could offer toward church decoration.

A green and white aspidistra, that is sometimes known as Fountain plant, is a plant asking but a minimum of skill, and much or little sunshine as happens to be convenient. A busy woman who avers that every plant she owns is sure to die, has kept one of them in fair condition these four or five years. Some plant-loving friend repots it for her occasionally, dividing the crowns as they become separated and unless some mischance befalls the rather brittle leaves it is always in good trim and fills a jardiniere successfully in a parlor even where no sunlight enters.

Euonymus japonicus variegatus is as hardy of leaf as it is cumbersome of name. Its heavy, glossy leaves make it one of the most decorative and useful of plants. It forms a bush that may be grown to almost any size. I do not know how far south one must go to find it a hardy denizen of the lawn, but when one recognizes its decorative uses indoors there can be small desire to banish it from the hall or dining-room. It may be turned into the open border in summer and lifted in fall without loss of a leaf if shaded for a few days.

P. T. PRIMROSE.

Cranford, New Jersey.

PALMS AS HOUSE PLANTS.

IN selecting palms for window or house culture those species should be chosen which experience has proved to be best adapted to this particular purpose. Among the best for this use may be named the following: Kentia, especially K. Belmoreana and K. Forsteriana; Phoenix Rupicola, P. reclinata and P. Canariensis; Seaforthia elegans; Latania Borbonica; Areca lutescens; Cocos Weddeliana; Livistonia Australis and L. rotundifolia.

Probably as many plants of the two species of Kentia named above are employed in house culture as of all other kinds together. This is because of their graceful appearance and their almost perfect adaption to the conditions of room culture. But all the plants named in the list given above above may be considered, quite amenable to house treatment.

Cocos Weddeliana is one of the most handsome in its general pose, and having extremely graceful fronds. Seaforthia elegans is a very graceful and quick-growing plant. Phoenix rupicola is a particularly graceful palm; P. reclinata is somewhat stiffer, still a very desirable species. P. dactylifera is the true date bearing palm, not specially advised for house culture, though it will thrive well, hardy, handsome when young and can easily be raised by planting seeds taken from dates as they are eaten. Seaforthia elegans, as its name implies, is a plant of very elegant form. Latania Borbonica is commonly known as the Chinese fan palm and is a very popular variety. Livistonia rotundifolia is somewhat similar to the last but smaller leaved and is much used as a table plant. Areca lutescens, sometimes called the Ostrich Feather palm, is a plant that is very much admired. It has long, graceful fronds of bright glossy green, but the stems become a rich golden yellow.

Palms do best in a good light, though direct sunshine is not needed, but it is not harmful, as some suppose. The firm hard texture of the leaf of the palm enables it to bear treatment often, in house culture, which soon render worthless more common plants and softer leaves.

A good soil for potting palms may be prepared by making one-half of it to consist of fresh strong loam, and the other half composed of equal parts of leafmold, sand and well-rotted stable manure. In potting the

plants should be set with the collar, that is the point where the root starts away from the stem, just at the surface of the soil, as there is a tendency to decay if set low in the ground. Attention should be given drainage by placing about an inch of bits of broken pots in the bottom before placing in any soil, for water must not be allowed to stand about the roots. Some persons pot palms in jardinières with the result that they soon become unthrifty and worthless. As these receptacles have no drainage the water settles at the bottom causing the soil to become sour and the roots to decay. A jardinière should never be used except for the purpose it was originally intended, that is, an ornamental dish in which to set a potted plant.

During spring and summer when the growth of the plants is most active a thorough soaking of the soil will be needed nearly every day, but in winter less water will be required.

The foliage of palms should always be kept clean. This can be done by occasionally sponging the leaves, and by being careful to cover the plants whenever any sweeping is done that will cause dust to rise. Spraying the foliage frequently with a fine hand sprayer is very desirable.

The insect with which palms are most liable to be infested is the scale. It breeds rapidly on the plants when kept in a high temperature and the air dry. The insects attach themselves to the stems and the surface of the leaves, and are easily seen and can be removed separately by pushing them off. A plant may become badly infested in a dry air in a short time if neglected. In such a case one of the easiest means to clean the plant is to take some dilute alcohol or whisky and, with a small brush dipped in the liquid, brush over all the infected parts, killing the insects. When this is done an old, soft tooth brush or even a sponge with soap and water will enable one to clear away all the dead scales.

The rooms where palms, or any other plants, are kept should have moisture supplied to the air by evaporating water at the register of a furnace heated room, or by means of the steam or hot-water pipes or by standing on the stove.

A temperature of 60° in winter will be sufficient for any palms of the species named above, but they will bear a higher temperature; however, in a living room they should be placed in the coolest part, so that, if possible, the surrounding temperature may not be more, at any time, than 70°. Once in two years is often enough to repot the plants, and if some of the top soil is replaced with some that is fresh, the repotting may be deferred even longer.

ACALYPHA HISPIDA.

THE Acalyphas are tropical plants which have become known in this country only within the last twenty years, and have not come into very large use for the reason that their principal value is their handsome foliage when displayed in bedding among other plants. They can be propagated readily and yet they have not met the favor of most other bedding plants. They have made their appearance mostly in the beds of city parks and other public grounds, and on large private places. *A. Macafeana* is the species oftenest seen. It has large oval leaves of a reddish or bronzy, coppery color. Others have large, bronzy green leaves, spotted, splashed, striped and mottled with red and crimson.

Last year, at the Ghent Exposition, the well-known English horticulturist, Sanders, exhibited a plant of remarkable aspect under the name of *Acalypha Sanderi*. This plant has proved to be one previously known and described as *Acalypha hispida*, but before its identity was learned it was put on the market in England as *A. Sanderi*, and under this name it has come to this country and been disseminated here among growers. Its correct name *A. hispida* will, however, be maintained, and the use of the name *Sanderi* should be discouraged, although it will be impossible to suppress it immediately or entirely.

This plant is a native of Java and probably of other neighboring islands. As will be seen from the engraving here presented, it exhibits a most unique appearance. When fully grown its height is about eighteen inches, and it bears from the axils of its leaves long, crimson or bright red, pendant racemes of flowers ten or twelve inches in length, which are said to remain in perfect condition for several months. The *Acalypha* is a dioecious plant, that is the male and female or staminate and pistillate flowers are borne on separate plants. The pistillate plant of *A. hispida* is the more beautiful one, and the one cultivated, as here shown. The ovate leaves borne on stems from an inch and a quarter to two inches long, are from four to six inches in length, and from two and three-fourths to four inches broad, sharply pointed at the apex, and with them coarsely toothed. As a show plant in the greenhouse and conservatory, and possibly in the window, *Acalypha hispida* will most assuredly be in demand. Like all the *Acalyphas*, it delights in full sunshine, and it may be that, with other suitable plants, it will yet come into use to some extent for bedding.

A NOVEL WINDOW GARDEN.

“Eureka!” I cried in jubilation.

“Well,” remarked the good man, in a tone that might be taken for resignation by one who did not know, “We can move out as soon as the weather is warm enough!”

Then I looked around the room.

It certainly did take up a goodly share of the little sitting room, but then it was so nice for those fat rollicking plants that were being threatened every night by Jack Frost, and that were sure to find themselves in his clutches before spring if something were not done.

“It” was a box—a big packing box, four feet long, three feet wide and three feet deep, and it had been out in the yard all summer.

I had noticed, coveted and secured it, and now it stood in front of a broad south window, on the broadest side to give most room. The top was open and the side next the window also, as far down as the window sill. In the side of the box farthest from the window,



ACALYPHA HISPIDA

one foot from the bottom was a shelf one foot wide, on which to set the smallest plants. The tallest ones set on the bottom, or on some small object on the bottom, to bring them just high enough, while medium sized plants set in a row next the window on a small shelf. The box was full, a few small things hanging from the sides on nails. I said the box was full, but one little corner, a foot square was empty.

This place had been reserved for the tea kettle. Each day, this article filled with boiling water, is set in the corner, a folded sheet thrown over the box, and the plants are steamed in most approved fashion.

Every night a blanket made of newspapers is thrown over the box. When sweeping is to be done the box is easily covered with newspapers to exclude dust. All through the middle of the day the sun shines cheerily into this box, and one is greeted when stooping over it, by the sweet breath of rose geranium and heliotrope.

The outside of the box will be papered with some pretty wall paper, and lo! one of the most difficult problems that confront the amateur flower-grower in an Oregon “box house” is solved.

EVAN.

Eastern Oregon.

VICKS ILLUSTRATED MONTHLY MAGAZINE

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CHARLES W. SEELYE, Editor. ELIAS A. LONG, Associate.
Formerly conductor of *Popular Gardening*

Publishers are invited to use any articles contained in this number, if proper credit is given.

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All contributions, subscriptions and orders for advertising should be sent to VICK PUBLISHING CO., ROCHESTER, N. Y.

Gleanings.

The use of Jadoo Fibre during the past year has been to a great extent experimental, and it appears to have been learned that the best results are obtained by employing one-third Jadoo mixed with two-thirds good loam or potting soil. The experience of another year may bring some additional knowledge of this material.

It appears that florists raising roses for cut flowers have confined their attentions mainly to three varieties, American Beauty, Bride and Bridesmaid, and now a reaction is taking place, as the public demand a greater variety. With so many fine varieties of tea roses it is strange that the three kinds named should be grown so largely and all other sorts so little.

The Ontario Fruit Growers' Association held its annual meeting at St. Catherines, Ont., December 1st and 2d. Among other subjects discussed was that of "ringing" grapes and it is reported that it was decided that "ringing" improves the size and the appearance of the fruit, but impairs the quality. This decision could not have been made by persons who have carefully tested the effect of the "ringing" practice. In fact "ringing" improves the quality of the fruit as much as it does the size and appearance. Notwithstanding, "ringing" can be conducted safely and profitably only under well defined limitations.

The care of house plants was the subject of an address at the meeting mentioned above by Mr. W. Gammage, of London, Ont., in which he stated that the use of castor oil, by some people thought beneficial for house plants, was injurious and irrational. The following formula he thought a good one for preparing soil for pot plants: one-half decayed clay loam sod, and the other half consisting of two parts leaf mold, two parts Jadoo Fibre and one part well rotted cow manure.

* *

Popular Names of Plants.

Our correspondent from Geneva, Illinois, very energetically makes a protest, in the Family Cozy Corner, against the use of the name Calla lily in particular and against irrational popular names of plants in general. His view of the case is, in a strict sense, correct, but, unfortunately, he looks from a standpoint different from the popular one, and so is in the minority, and his cause is consequently a lost one, for, in the use of language, the custom of the people must prevail. The term "Calla Lily," although absurd from a botanical aspect in the present state of nomenclature, is not more so than many other plant names in common use, and one thing that is very certain is that the public will not allow botanists to make for them the names they commonly apply to plants. But, furthermore, it must be remembered that the name Calla was the correct one, botanically, as applied to *Richardia Africana*, even within the last half of the present century, and therefore has abundant warrant scientifically. Neither is the term "lily" in common parlance without some appropriateness as applied to this plant, as the white lily is associated sentimentally with purity and beauty, both of which are eminently suggested by the great white spathes. It cannot be expected that popular names shall be expressions of scientific accuracy any more than that all botanical names shall indicate the exercise of good judgment. But our friend, in the hereafter, may his shade have peace!

Propagating Hardy Roses.

The following method is given by A. W. Rankin, in *American Gardening*: "With a greenhouse rose cuttings may be started in damp sand at any time; but without this convenience, it is better to start the cuttings out of doors, in a cold frame from October to January. Make the cuttings with several eyes, when the wood is sufficiently ripened to show the newly formed bud at the axil. Place the cuttings closely together in the frame, which should occupy a dry place, with the soil, which should be sandy, packed close about them. Water once, if necessary, and cover with forest leaves, or other convenient protecting material. By March or April the cuttings should be well rooted, and may be potted and kept in the hotbed until May, when they may be safely planted out. If one has no frame, a large dry goods box makes a good substitute by the removal of the top and bottom. The cuttings must be protected from severe freezing, but will stand very cold weather. During summer, roses are also propagated by layering, only shoots of the young growth being used."

* *

A Wedding Bouquet.

The marriage, says the *Journal of Horticulture*, of Lady Lilian Churchill, sister of the Duke of Marlborough, to Mr. Greefell, was solemnized in the Chapel Royal (London) on Saturday last, October 8th, amid an unstinted profusion of choice white exotic flowers, that contributed largely to what was an exceedingly pretty, as well as a bright and cheerful ceremony.

The bride carried a lovely bouquet, made and despatched from Blenheim Palace gardens the same morning, whence, it will be remembered, the colossal bridal bouquet was forwarded to New York for the Duke of Marlborough's wedding. The one used on the present occasion was one of the description known as a shower bouquet, and was composed of choice orchids, white tea roses, lilies of the valley, stephanotis, eucharis, orange blossoms and white carnations, skillfully set in myrtle and Asparagus plumosus, the arrangement being rendered complete with a broad white satin ribbon encircling the handle, and depending in graceful lengths from bows below the marginal feathery sprays.

* *

Curl Leaf of the Peach.

In our last July number an account was given of the use of Bordeaux mixture, by the Ohio Experiment Station, to prevent the "Curl Leaf" of the peach. Mr. L. R. Taft, of the Michigan Experiment Station, now states that spraying with a solution of copper sulphate, one pound to twenty-five gallons of water, while the trees are in a dormant condition, or before the buds swell, has given as good results as the use of Bordeaux, at a later time, and even advises that the spraying should be done in autumn or sometime during the winter.

When it is thought desirable to coat the trees with whitewash, to prevent action of the sun in swelling the buds during warm spells in winter and early spring, then the Bordeaux may be substituted for copper solution, and to be effectual the spraying should be repeated whenever the lime has been washed off by rains, so that the trees, in every part shall be completely coated with the lime wash.

* *

Burbank Rose.

The rose originated by Luther Burbank, of California, called by him Santa Rosa, and noticed in our pages in June last, it appears has passed into the hands of W. A. Burpee & Co. for propagation and distribution. It is a Bourbon Tea, a cross of Hermosa with a seedling of Bon Silene. The color is described as a "cherry-crimson pink." The plant is to be renamed and sent out as the Burbank. The plant is said to be a free and constant bloomer and the flowers large and finely formed, but, unfortunately, entirely scentless, a fault so great that to most people it will be worthless.

* *

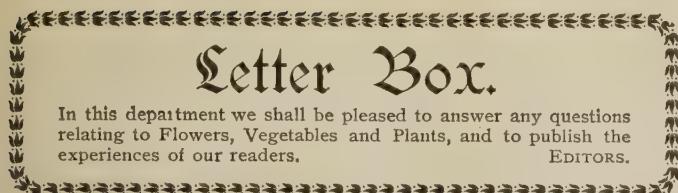
Paris Exhibition of 1900.

The plans of the Horticultural Section at the Universal Exposition at Paris, in 1900, are said now to be complete. It is to be hoped that arrangements have been made for a full exhibit of the horticultural industries of this country.

* *

100,000 Magazine Subscribers.

When writing to us for premium list, sample copies, etc., please send the name and address of a few friends along with your order. We will deem it a kindness. The only condition we wish to make is that they be names of people interested in flowers and a good garden.



Letter Box.

In this department we shall be pleased to answer any questions relating to Flowers, Vegetables and Plants, and to publish the experiences of our readers.

EDITORS.

Moles in the Garden.

The moles have become so very bad in our garden, and all around the place that they have destroyed a good many of my bulbs. Can you tell me any remedy for them in your MAGAZINE?

N. A. M.

Macon, Ill.

Various methods are adopted to destroy or drive away moles. Some persons appear to be able to use mole traps to good advantage, while others are not so successful with them, probably, because they do not give the needed attention. It is said that kerosene oil poured into a mole ran, and then covered up, will drive the creatures away. Bisulphide of carbon will kill them if it reaches them; pour into the mole run about a gill of carbon bi-sulphide and immediately cover it over; the fumes will penetrate the runs for some distance and will kill the moles if present. Small bits of meat containing a very little strychnine will kill the animals if eaten by them. Grains of corn soaked in strychnine and water, and placed in the runs, are also said to be destructive if eaten.

++

Plants to Name.—Forsythia.

1.—Would like to know the name of a plant I have. I enclose a leaf. I received it last summer; it is about six inches in height, very pretty foliage, shiny dark green leaves, said to have a white flower, and of slow growth. Would like to know where it is a native and how to treat it.

2.—I started a small slip of *Forsythia viridissima* shrub in water a few weeks ago, it rooted nicely. I put it in a pot of earth and now the golden bells are coming out. I have it in a cool room. Shall I put it in the cellar now until spring? I want a bush of it.

Mrs. H. M. G.

Blue Rock, Pa.

1.—The leaf received is small, ovate, nearly an inch and a quarter in length, and nearly an inch broad, edge entire, thick, firm and leathery in texture, dark green. We cannot say what the plant is. A single leaf without any peculiar mark is insufficient to identify a plant. It is, undoubtedly, a slow grower, requiring cool treatment and light watering.

2.—As the cutting of *Forsythia* is only now making roots it should not be put into the cellar, but be kept in a cool place in the light where it will grow slowly. Be careful about giving water. Early in spring it can be planted outside.

++

Fancy Caladium Bulbs in Winter.

Will you please advise me in regard to the best methods of keeping bulbs of the fancy caladium through the winter?

J. H. H.

Pennsylvania.

The plants when through growing in autumn should be dried off, allowing the bulbs to remain in the pots, and keeping the soil only a little moist, but not entirely dry, and in a temperature of about 60°. Keep in this way until ready to re-pot in spring.

We are aware that some have advised that the bulbs should be kept dry in winter, but this course is not safe. Instructions given in Vick's Flower and Vegetable Garden are as follows: "During the resting season they should be nearly dry. At this time they ought to be a little over 60°, for they will be apt to decay if kept cooler."

The following instructions are given in Greenhouse Management, by Taft: "As the temperature drops and autumn comes on, and the leaves begin to droop and die, the water should be gradually lessened, until they are ready to be packed away for winter. This should be in some place where the temperature will not fall below 55°. Even during the winter the water should not be entirely withheld, as, if kept too dry, rot at the center may ensue."

A writer, M., in a late number of the *Florists' Review* has this to say on the subject: "I have noticed in several journals the advice to keep fancy caladium bulbs in a warm, dry place during winter. I have seen hundreds of bulbs ruined by a species of dry rot when kept thus, but have never seen a single bulb lost when kept in a moist condition in a suitable temperature. Put them in a box and cover with sand or soil when shaken out of the soil in which they were grown. Stand in a warm place, keep moist at all times and the bulbs will turn out when wanted as plump as when put away. There will be no loss if the bulbs are in proper condition when stored."

**

One Way.

If each of our readers will renew his subscription, and influence only one friend to subscribe for the MAGAZINE, how our subscription list will bound and celebrate that Fiftieth Anniversary.

AN ENLARGED USE OF EVERGREEN TREES FOR TEMPORARY PLANTING.

THERE is a growing custom in many of our large American cities, of using coniferous trees of various kinds for the temporary embellishment of lawns and buildings during the winter. It is a most gratifying practice, and one that indicates the increasing love for natural adornment with tree effects by our people. The appropriateness of this kind of embellishment can be admitted at once, as we consider the beauty and the pleasing contrast afforded by all evergreen trees in the midst of winter scenery.

The most common uses to which trees of the class referred to are put is perhaps that of planting lawn vases or boxes, or even the beds that in summer were filled with bright plants and flowers, using thrifty rich-hued evergreens, putting them in place in the fall or early winter. Quite frequently of late, we also see the large pots, that are used in the summer for flowering plants about the steps and verandah, thus filled, each with a handsome pine, spruce, or, perhaps, a globe-headed *Arbor Vitæ* tree.

Recently the writer met an instance of this temporary use of evergreen trees that was something of a departure from what he had been accustomed to see. It was in the case of a hotel in the residence portion of the city, the same being situated at the corner of two prominent streets. On a somewhat ample width of lawn between the house and the sidewalk in two directions, (see annexed engraving) were planted in November, several dozen evergreens purely for winter effect. The trees were arranged in irregular clusters with a degree of freedom such as a landscape gardener is supposed to aim for, and all with a particular view to the beautiful contrast that should follow after the snow season sets in. By glancing at the accompanying engraving it is easily imagined how pretty the effect will be.

To those who raise and deal in evergreen trees such a use of conifers opens up possibilities of some extent. Of course, it is generally understood that evergreens thus planted, late in the fall, will not successfully survive beyond the one season. But that is no argument against the custom with the average well-to-do American. He reasons that it is as sensible to plant for five months of winter effect on the lawn, as for the same length of time with bright flowers for summer effect. Indeed this is an argument for the winter planting that does not apply with equal force in summer decoration, namely, that, in the summer, people of means are usually away much of the time to the sea shore or other resorts, while in winter they are tied closer at home.

In the case of lawn embellishment indicated in the engraving, it is the expectation in the spring to remove the trees and to level down the sod again to its former condition, none the worse for having borne such a pretty effect during the winter. The probabilities are that the planting will be repeated a year later, and no doubt this will cause others to follow the good example. We would not be surprised to see this temporary planting of evergreens develop into a business that would be of decided advantage to nurserymen, florists and tree dealers.

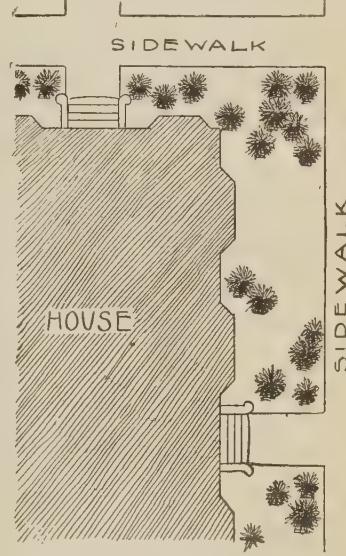
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January Work.

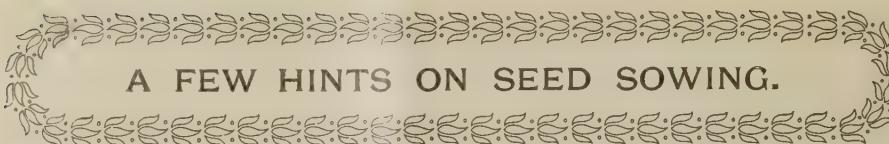
Those who have the facilities of a greenhouse can this month sow seeds of pansy, verbena, double petunias—single petunias for planting out can be left for a month later—ageratum, double daisy, myosotis; ten weeks stocks, begonias, centaurea, coleus, cuphea, cyclamen and lantana.

Not much will be done out of doors this month, even in the south, except in Florida where many kinds of garden vegetables will need attention, such as radish, lettuce, spinach, carrots, parsley, onions, cabbage and cauliflower, sowing seed, and also of the last setting out plants raised earlier. Many of the above may be raised in coldframes in the Gulf and Lower Atlantic States.

Fuchsias, the annual blooming pelargoniums and hydrangeas which have been resting may now be started. Amaryllis bulbs that show signs of starting can be repotted and given water, and light grape vines should be pruned this month if possible, and any of the hardy fruit-bearing trees and shrubs that require it may be pruned.



EVERGREENS FOR WINTER DECORATION.



A SEEDSMAN'S DIFFICULTIES.

SEEDESMEN have more difficulties to contend with, in their business, more complaints to answer, and more little annoyances, than any, if not all other classes of tradesmen combined. This comes from a variety of causes, all, or nearly all, of which are entirely beyond their control, and for which they are not in the least responsible. It is safe to say there is no class of tradesmen more anxious to please than the seedsman; neither is there a class more careful in all business operations, taking every possible precaution against seeds of doubtful character, both as regards vitality and purity of type. The seedsman's capital is reliability, if that becomes impaired, his business becomes a wreck; hence his efforts to please. His greatest annoyances are the many complaints annually made that the seed sold does not "come up."

Now, all or nearly all these complaints are honestly made. The complaining parties have anticipated beautiful flowers, their hopes are blighted, and, ignorant of the real cause of failure they attribute it to poor seed. Many who cannot possibly imagine themselves in the wrong, come to the conclusion they have been duped. In some cases they may have been. In order to see whether they have or not let us inquire into some of the

CAUSES OF FAILURE.

Seeds frequently fail to produce plants or to germinate even, and, in other instances when there is a satisfactory "come up," the plants do not develop and produce such flowers, or root crops as are expected. There are causes for this, many causes other than the one generally attributed, viz.: Poor seed, for which the seedsman has to carry the blame. This is in many instances, unjust, for it is not the seed but the sower that is to blame. There are many cases of failure among them, and perhaps the prominent one is the careless preparation of the soil, and the equally careless manner in which seeds are sown.

The soil should be carefully prepared before the seeds are sown; it should be worked deep, and made fine, and, when the seed is sown, the soil should be firmly pressed about them. Firming the soil over the seeds has been practiced by the best horticulturists, and for this purpose the garden or farm roller was employed, and both to prepare the soil in making it fine and to press it firmly around the seed. The spade has long been used for this purpose. The modern plan, or practice rather, of using the feet in seed sowing—by treading the soil firmly—is one of the most effective, practical and convenient methods, as the feet are always with the gardener and ready for use when required, a fact that admits of no excuse if the work is neglected. The influences that act upon the seed to cause growth are heat, air and moisture, and without a proportionate amount of each, there can be no plant life.

Now, it follows that when a seed is put into the ground, and loosely covered with dry soil, which is often, when the soil is of a clayey nature, very lumpy, it does not come in contact with sufficient moisture to soften its coating and set free the germ. Neither is there sufficient heat, because of the too great circulation of air

around the seed to perform the chemical changes upon which vegetable growth depends.

When we place a seed into the soil, if the conditions are favorable, it immediately commences growth in two opposite directions, upwards into the atmosphere and downwards into the earth, the two sources from which plant food are obtained. The first root, so-called, the seeds put forth does not furnish the young plant with food for its development; it is simply an underground stem which holds the plant in place, and from it the feeding roots, which can scarcely be seen by the naked eye, put forth almost as thickly as the hairs on an animal. The cotyledons or seed leaves contain sufficient nourishment for the infant plant until its true leaves and roots are formed. If the soil is not firmly pressed around the seed, the underground stem will not reach it, and when the feeding roots put forth they will have nothing to feed upon; they must come in immediate contact with moisture, or the warm, dry air will destroy them, and the whole plant will stand still until new feeding roots are formed, or in the meantime perish. Herein lies the benefit of firmly pressing the soil around the seed when planting.

Deep planting is a frequent cause of failure; in seed sowing, imitate nature, whose right hand in planting rarely covers the seed, except with leaves, and whose rains beat the soil around the seeds perfectly. This is a very important point, and negligence therein is a fertile cause of failure, even with experienced gardeners. A depth of about twice the average diameter of the seeds themselves, is a good general principle to follow; this will bring the majority of seeds but just under the surface, and some of the very finest will not be actually covered at all, but just sprinkled over the surface, and, if firmly pressed in, is quite sufficient.

The nature of the plant must be understood to insure success. Many seeds are planted sadly too early, while with others the reverse is the case. Seeds that had their parentage in tropical climes will invariably rot if sown when the ground is cold and wet, while those from more northerly climes will fail to germinate unless sown when the soil is cool and moist. It is an assistance to germination to shade the soil partially or wholly, until the plants put in an appearance. Some seeds, such as the gladiolus, will not germinate at all unless the ground is shaded, then scarcely a seed will fail.

The common practice of sowing seed when the soil is wet is a bad one. Wet soil cannot be as finely pulverized as it should be when the seed is put into it. Choose a dry day, make the soil fine, sow the seed, and cover with some mulch to prevent evaporation, and the moisture from below will be all the seeds require.

If the soil is a heavy clay, it is better by far to procure some fine sand, and put in the drills to the depth of half an inch, and cover the seed with the same. It matters not what the character of the sand may be, if it is only fine, the plants will find nourishment from below or above it, and carry on their work.

Insects are frequently hidden foes of the plant, they work underground, and consume the germ before it makes an appearance above ground. To prevent loss from this source, it is a good plan to strew tobacco dust thickly in the

drills, and cover the seeds with it. Tobacco is not only destructive to insect life, but it is an excellent fertilizer as well, and should always be used with seeds of an oily nature.

C. L. ALLEN.

**

RETARDING STRAWBERRIES.

The aim of many of our northern originators, says M. G. Kains, in *Farm and Fireside*, is to secure a very late strawberry, and nearly every season our attention is called to new ones later by a small fraction than those of a year ago. This effort is put forth largely because the southern berry now makes its appearance in our markets long before our berries blossom.

The strawberry season may, however, be prolonged from three to fourteen days by the following simple method which the grower can completely control. Make the bed upon a northern slope, so as to lesson the influence of the direct rays of the sun; plant the latest fruiting variety found to succeed in the neighborhood, and treat the bed the first season in the usual manner, but in the autumn withhold the usual mulch. In February or early March, when the ground is frozen hard and as deep as it is likely to be, apply a heavy mulch of coarse manure, and tread it down between the rows. Manure that falls upon the plants must be raked off, as it will injure and may even kill them. Then cover the crowns with a thin coating of chaff, and top off with six or eight inches of marsh hay, or where this cannot be obtained, with clean straw. This triple mulch is to remain undisturbed until blossoms appear upon unmulched plants near by. If the covered leaves do not turn white the mulch may be left even later.

Enough straw immediately over the rows should then be raked off to expose the plants, which will flower and fruit even two weeks after unmulched berries of the same variety. The mulch must not be taken from the bed, but left between the rows until after fruiting is over.

The advantages in this plan are that the blossoms are protected from late frosts that so often prove destructive to the crop, and the fruit comes to market after the glut and commands higher prices.

**

COMMERCIAL FRUIT GROWING.

The well-known nurseryman and fruit grower, S. D. Willard, of Geneva, N. Y., has recently made an address before the meeting of the Massachusetts Board of Agriculture, at Amherst. A brief report of the address is given in the *American Cultivator*, and from this some extracts are given below. Referring to Western New York, he said:

MONEY VALUE OF ORCHARDS.—Good orchards of all fruits have a fixed value that has been well maintained. They are rarely found for sale, their estimated value being from \$200 to \$1,000 per acre, the difference growing out of the location, condition and varieties grown. The latter has been too little thought of in planting for commercial purposes. A friend who is known as one of the best apple growers in my county has assured me that \$1,000 per acre would be no temptation as a purchase price for his orchard, he claiming that his plantation of Nonesuch and Baldwins has paid him more than ten per cent. net on the sum through the last ten years. The past season, with only a moderate crop, and a large amount of defective fruit, the receipts from about twenty-five acres have amounted to something over \$4,000.

He refers to ordinary farm land in that vicinity which sold forty years ago for \$135 per acre, and has recently changed hands at \$60 per acre, and gave as a reason for this depreciation "the opening up of the

fertile sections of the far west, which, with the rapidly increasing facilities for cheap transportation, and improved appliances for producing and securing everything grown, has afforded competition so sharp that grain growing and stock raising gave no longer any attraction for the New York farmer."

"He suggested as a remedy for this depreciation in value, a more diversified system of agriculture and the growing wants of the rapidly increasing population of our cities and manufacturing towns more thoroughly studied and understood, with the view of growing and supplying such products as can be grown cheaper and more profitably than in those remote sections better adapted to other purposes."

THE CURRENT AND GOOSEBERRY.—He has found the currant and gooseberries easily handled, well fitted for long shipments, and grown with profit. They seem to thrive best on a cool, moist soil, where the foliage holds well into autumn. The President Wilder and Prince Albert, by reason of their great productiveness and good shipping qualities, are his favorites as currants, and the English sorts and Downing pay best among the gooseberries.

THE PEAR.—The pear is one of the profitable orchard fruits, and the Bartlett, Bosc, Winter Nelis and Kieffer are among those that pay best. The latter is in great demand as a canning fruit, and finds ready sale in the city markets. These are grown cheaper and sold higher than most other varieties.

THE CHERRY AND THE PLUM.—The cherry and the plum have both been on the neglected list in New York for years, but a demand has sprung up which makes a market for all grown. Of cherries the Montmorency ordinaire, English Morello and Windsor are the sorts generally grown. "The two former are required in larger quantities by the canning factories as well as the city markets, while the Windsor supplies the fruit stands with the largest and most excellent fruit of its season, with no probability of a surplus for years to come. It is rarely sold at less than ten cents a pound at wholesale." Two parties of Mr. Willard's acquaintance annually sell between forty and fifty tons of sour cherries, which are packed for market at an expense of about one dollar a hundred pounds, and usually sold it from \$100 to \$120 a ton.

Plum growing has become one of the largest of the fruit-growing industries. A few varieties of the European sorts are principally grown, and will be for years to come, but the advent of the Japan type has given the business a fresh impulse.

THE QUINCE.—The quince is grown to perfection on most lands where the apple and pear are found to thrive. Its fitness for long-distance shipments makes it a favorite fruit with many growers, and some of them claim that it can be produced at less cost than the apple.

THE PEACH AND THE APRICOT.—With a better knowledge of the wants of the peach and apricot as regards soil and location, and the development of varieties whose fruit buds are specially fitted to withstand the extremes of our climate, the cultivation of these fruits is considerably on the increase.

**

PREVENTION OF POTATO DISEASES.

It is well occasionally to have a re-statement of facts and new testimony in relation to the results of practice. As such, here are presented some statements made by Mr. L. H. Reid, of Wisconsin, at the winter meeting of the Missouri Horticultural Society, in December, 1897. Mr. Reid raises potatoes on a large scale and makes his statements in regard to potato culture from actual knowledge. This is his advice:

"No one should ever plant a field of potatoes without first soaking the seed in the Corrosive Sublimate Solution (two ounces of Corrosive Sublimate to sixteen ounces of water). Even if the seed appears perfectly free from every trace of scab, soak it, as the germs of scab may be clinging to the skin of the tuber. The expense is small, and the remedy sure, if the treated seed is planted upon land free from the germs of the scab."

Bordeaux mixture is just as sure a remedy against blight as is corrosive sublimate against scab. But one thing must be remembered, and that is, it is not a cure, but a preventive. In using it you must commence early and apply it as often as necessary to keep every leaf coated

with an armor plate of copper. Then the germs of the dreaded blight will not be able to gain entrance. Don't apply it once or twice and think that will do, as you will be very likely to lose entirely the labor expended in the first applications. If you take up the battle you must keep it up until the season is over, or your labor may be in vain. In a wet season you may have to go over your field as often as once a week, or even oftener. The only safe way is to keep that armor plate solid, or the little foe may enter. In an ordinary season four or five applications give very satisfactory results.

**

SUCCESSION OF HARDY BLOOMING PLANTS.

Will the editor give a list of six shrubs that will be sure to furnish a succession of bloom from May 1st to Jack Frost? Also a list of six hardy herbaceous perennials that will accomplish the same thing; and a list of bulbs that may be depended upon to keep up a show from April 1st to October 1st, giving the season of bloom of each. I am sure many subscribers would be glad of such a list, and would soon have in their garden the "blossom factories" named.

AN INTERESTED READER.

In compliance with above request the following list will be found to answer as near as possible the conditions stated, and the time of blooming is in the order as named, commencing in April and continuing for six months.

SIX HARDY SHRUBS.

Forsythia Fortunei.
Japan Quince.
Spiraea Van Houttei.
Weigela rosea.
Spiraea Bumalda.
Hydrangea paniculata grandiflora.

But the list above is too short and the season of bloom of the members of the series may not in all cases overlap or reach the next one in succession. A much more complete series may be made with twelve kinds instead of six, as follows:

TWELVE HARDY SHRUBS.

Forsythia Fortunei.
Japan Quince.
Snowball, Tall, Viburnum opulus sterilis, or Dwarf, Viburnum plicatum.
Lilac, many varieties.
Syringa.
Spiraea Van Houttei.
Weigela, several varieties.
Clematis Jackmanii, June, July and August, and Clematis paniculata, September.
Hall's Honeysuckle.
Spiraea Bumalda.
Althea or Hibiscus Syriacus.
Hydrangea paniculata grandiflora.

SIX HARDY HERBACEOUS PLANTS.

Dicentra spectabilis.
Peony, many varieties.
Spiraea palmata elegans.
Phlox, Perennial, many varieties.
Rudbeckia Golden Glow.
Anemone Japonica, red or white or Whirlwind.

But the above list though as good as may be named, has the same defect as noted in the list of six shrubs, and the following list will far better serve the purpose.

TWELVE HARDY HERBACEOUS PLANTS.

Violet.
Dicentra.
Pink.
Peony, many varieties.
Spiraea palmata elegans.
Alpine Aster.
Phlox, Perennial, many varieties.
Calliopsis lanceolata.
Delphinium formosum.
Rudbeckia Golden Glow.
Yucca.
Anemone Japonica, red, white or Whirlwind.

SIX KINDS OF BULBOUS AND TUBEROUS PLANTS.

Lily of the Valley.
Funkia alba, F. Japonica, F. Coerulea.
Hemerocallis flava or H. aurantiaca major.
Lilies of different species.
Gladiolus, many varieties.
Canna, many varieties.

The last two in this list are not hardy in northern localities, but are easily cared for during winter.

**

GRAM, CHICK-PEA OR IDAHO PEA.

This is a leguminous plant supposed to have originated in Asia Minor. It was in cultivation among the ancient Greeks and Romans, and there is now a large acreage devoted to it in India, where it is grown principally for the food value of its seed, and to some extent, also, as a fertilizing crop, as we employ crimson clover. It is raised to some extent in Mexico. Within the past twenty-five years it has been tried in different parts of this country. It happens to do best in the arid and semi-arid regions as it requires a long season of sunshine to perfect a crop, but it does far better with irrigation than without. The department of Agriculture has issued a circular in relation to this plant, prepared by Jared G. Smith.

Gram is a staple article of horse feed in India. The seed is also highly valued for fattening sheep and cattle. There is a considerable trade with England and other foreign countries where the peas are used for the same purposes. Besides serving as a fattening ration for cattle and sheep the seeds and different parts of the plant find many uses among the natives of India. The green peas are eaten as a vegetable. The meal is used for porridge, and the parched peas are used either in the preparation of a beverage or in various confections and candies. The young plants are eaten as a salad and sometimes cooked like spinach.

The leaves of the gram are viscid with a secretion which contains oxalic, acetic and malic acids, the first of these predominating. In India the secretion is collected by means of cloths spread over the plant at night and wrung out in the morning when wet with dew. The solution thus obtained is used in the preparation of cooling drinks and also finds sale as a vinegar. The forage is said to be actually poisonous to horses on account of the excess of oxalic acid in the leaves. Cattle eat it, but it often proves injurious to them, although to a less extent than to horses. However, this crop is not ordinarily grown as a forage crop, but for the seeds, and the seeds alone are used in India for feeding purposes.

Gram has been grown experimentally at the Grass garden, at Washington, D. C., where it made a growth from eight to ten inches and the seed production was very moderate.

While the average production in India is known to be about ten bushels of seed to the acre, and the highest yields not to exceed twenty-five bushels, there have been newspaper reports of its having yielded ninety bushels to the acre in certain Rocky Mountain regions. If it will yield even 25 bushels to the acre it will be a valuable addition to forage crops for some portions of the West, but until fuller and more extended trials are made western farmers are cautioned about investing too much money or devoting too much land to the cultivation of the Idaho pea, chick pea or gram.

**

100,000 new subscribers. Will you help?

HORTICULTURE IN MISSOURI.

The report of the Horticultural Society of Missouri, for the year 1897, appears as a handsome volume of over 400 pages, handsomely bound in cloth. From the evidence of its pages there is no question but horticulture, in some of its lines at least, is in a flourishing condition in that State. A large space of the report is occupied with papers and discussions relating to the different branches of fruit culture. But the culture of ornamental trees and plants also receives attention. Here are a few extracts: Mrs. M. J. Holland, in a paper on Rose Culture, and referring to the rose slug, says:

I prefer the white hellebore as being the simplest, cleanest and most pleasant to use. One tablespoonful of the powder to a gallon of warm water, prepared overnight and the plants sprayed in the morning with a rose watering pot proves an effectual remedy. Generally two applications are sufficient, frequently only one is required.

Mrs. G. E. Dugan read a paper on hardy bulbs, and after mentioning the spring blooming kinds, speaks of the Japan Iris.

The wonderful Japan Iris, with more blooms, more delicately beautiful than almost any other of the hardy bulbs, except only the lilies. And when the lilies came! Ah, what grandeur filled the garden; one felt to walk there one should wear robes of white, and golden bells should be tinkling from every tuck and hem of the shining garment, to harmonize with the heaven-sent beauty of all the royal family of lilies.

See them in their perfect tintings—scarlet, crimson, white, yellow, striped, mottled, flecked with soft falls of color that barely seemed to touch the petals as they cling, ready to fly away at a touch. Ah, it is too lovely to write about! To really enjoy the banquet of beauty, one must invest generously in lily bulbs. Get all of them you can, then mass the colors to suit your own taste. * * * We may as well get all the joy we can get out of the beautiful things God has given us, and there is more real loveliness and sweetness hidden away in the spheroid form of a bulb, waiting to be tucked away in soil that is moist and rich, than can be found in any other form of plant creation.

Miss Mary E. Marfeldt in her paper, on "Insects and their Products," has this little note:

One lady last spring, told me with great satisfaction that she had found the fly that laid the eggs from which the plant lice on her roses hatched. She showed me the culprit. It was a lace-winged fly which was busy placing its eggs, each on its slender stalk among a colony of the lice. She did not know that its larvae would have speedily cleared the bush of the sap-sucking aphides. Another friend had her gardener busy for days searching for and killing the alligator-shaped larvae of the lady-bug beetles which were helping to save her honeysuckles from destruction.

**

TRIMMING THE AMPELOPSIS.

Most persons who have cultivated the Virginia Creeper for a few years have learned that every two or three years it should be carefully looked over and pruned. Old and weak wood being taken out, many strong branches shortened, all in view of distributing the new growth and foliage evenly over the whole surface. The tendency of the plant is to make its strongest growth at the extremities of the branches, with result that many spaces remain comparatively lightly supplied with leaves or even bare. Judicious pruning regulates the supply of foliage, distributing it more evenly than it would be if left without pruning or training, for it is assumed that some training of branches will be made as the pruning proceeds.

The usefulness of pruning in connection with the Virginia Creeper, or *Ampelopsis quinquefolia*, is almost equally so with *Ampelopsis Veitchii* or Boston Ivy, after a few years growth. On account of its clinging habit not much can be done in training this plant by directly placing its branches, but their direction can be regulated and determined by the proper pruning. Left

to itself the plant spreads in every direction, often covering spaces not desirable, and leaving vacant others that one might wish covered. A careful pruner will be able to regulate the growth and disposition of the branches for the best effect. In the case of old plants, spread over a large surface, the points of growth are so numerous that the new growth is comparatively feeble. Proper pruning will enable many shoots to push with increased vigor and add much to the luxuriant appearance of the vine. It has been observed that the pruning of *Ampelopsis Veitchii* is seldom attempted, but it should be understood that it is a decided advantage to do so with vines that are several years of age, and this attention should be given them either in winter or very early spring, before the buds push.

**

PIGS IN APPLE ORCHARDS.

In a recent communication to the *Rural New Yorker* Mr. Campbell of Dutchess County, N. Y. tells how he manages with his pigs by allowing them the range of two apple orchards. Here is his statement of how the rooting paid:

This fall we sold our apples for \$1,500 on the trees, there being 1,100 barrels of A No. 1 fruit. With the exception of 300 barrels, all the apples came from the orchard in which the hogs had pastured. When the greenings were picked in the orchard where the hogs had been, the pickers got two bushels of culs to every 60 barrels of good ones, while in the other orchard they sorted away ten times that number. I believe that if we had had hogs in both orchards, we would have obtained nearly 2,000 barrels of fine fruit. Hogs not only keep all sod turned over, and the ground soft and mellow, but they eat all the affected fruit, and thus kill many injurious insects. They also bury all filth and foul matter, and continually fertilize the land.

As we train our trees low so that we can pick most of the fruit while standing on the ground, I do not think that sheep would be of much benefit to us, as they would gnaw the lower branches and younger trees. I much prefer hogs because they never let the orchard become sodbound, one cause which I think fills our markets with small and knotty fruit.

**

POSSIBLE DANGERS FROM EATING FISH.

In view of statements of a popular nature which have been made on the dangers from eating poisonous fish or from ptomaines contained in fish, a few words summarizing the actual knowledge on these topics seem desirable.

There are several species of fish which are actually poisonous. Few of them, however, are found in the United States, and the chances of their being offered for sale are very small. Such fish are mostly confined to tropical waters.

Fish may contain parasites, some of which are injurious to man. These are, however, destroyed by the thorough cooking to which fish is usually subjected.

Ptomaines are poisonous bodies due to the action of micro-organisms. They are chemical compounds of definite composition and are elaborated by micro-organisms breaking down complex ingredients of animal tissues, just as alcohol is due to the action of yeasts breaking down sugar, or as acetic acid is due to the action of *Mycoderma aceti* breaking down alcohol. The formation of ptomaines quite generally, although not always, accompanies putrefaction (often in its early stages), and therefore great care should be taken to eat fish only when it is in perfectly good condition. Fish that has been frozen and, thawing, kept for a time before it is cooked is especially likely to contain injurious ptomaines.

Canned fish should never be allowed to remain long in the can after opening, but should

be used at once. There is some possibility of danger from the combined action of the can contents and oxygen of the air upon the lead of the solder or the can itself. Furthermore, canned fish seems peculiarly suited to the growth of micro-organisms when exposed to the air.

Finally, fish offered for sale should be handled in a cleanly manner and stored and exposed for sale under hygienic conditions.

Oysters when "floated" or "fattened" should never be placed in water contaminated by sewage. Severe illness and death have resulted in a number of cases from eating raw oysters contaminated with sewage containing typhoid fever germs.

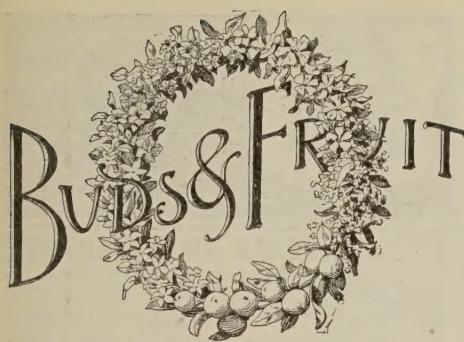
It is only just to say that the dangers from parasites, micro-organisms, ptomaines, and uncleanly surroundings are not limited to fish. Under conditions which favor the growth of micro-organisms, meat and other highly nitrogenous animal foods undergo decomposition resulting in the formation of ptomaines. Animal parasites may be acquired from flesh of various kinds if not properly cooked, provided of course the flesh is invested. The danger is reduced by proper inspection. Vegetable foods also may become contaminated in various ways. The importance of measures to secure pure and wholesome food can hardly be overstated. The best interests of the people undoubtedly demand a strict and impartial supervision by public officers of the sale of food products.—*From Farmer's Bulletin No. 85, "Fish as Food."*

WEDDING INVITATIONS

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Plan before planting.

The catalogues are welcome.

A garden diary is of much use.

Plant lice may mean shiftless culture.

Resolve on a better garden this year.

Sweet hyacinths open the floral year.

Flowering shrubs gain in popularity.

Mice spoil celery in the trenches. Trap them.

Making grape cuttings should not be much deferred.

The year is not started right if you are without a helpful gardening journal.

"Welcome longer days," the unuttered voice of the window plants.

From your window study the location of some effective evergreen clumps to be set in the spring.

Of great account: freedom from the presence of any decaying substances in the fruit and vegetable cellar.

Winter severity seldom reaches its height until new year. A hint: to protect delicate plants and shrubs now may answer about as well as if it had been earlier done.

A cabbage trust is talked of in Ohio. It's pretty hard to corner this round-headed, big-headed, everywhere-grown edible, although its bulkiness as an article of freight is somewhat in its favor, as against distant outside shipment.

Early sowing. "I begin flower seed sowing in January. Maurandia is one of the things I like to start near the new year, and close by alyssum, mignonette, petunias and Ten Weeks stock. Sown thus early, most of these received me with bloom long before Spring rounds up into summer.—V. B. S., *Chemung County, N. Y.*

Protecting young Wistarias. The beautiful Chinese Wistaria is notoriously slow in coming into bloom, a fact that has its influence in preventing the more general planting of this magnificent hardy vine. It sometimes happens, however, that this tardiness in flowering is attributable to a wrong cause, and the delay is really owing to the flower buds being destroyed by winter freezing on young vines, a thing not at all difficult to prevent. The way to prevent it is simply to lay down the vines on the ground and cover them with evergreen boughs, or inverted sods. Try it, and you may see bloom next season where otherwise you would not.

Have you a thermometer in the fruit and vegetable room? It is a great help for keeping the temperature well down towards freezing, by means of ventilating windows. The lower the temperature can be maintained and not freeze, the more favorable to its long keeping of orchard and garden products in prime condition. As a rule, more fruit is damaged by too much heat than by too little heat in the cellar. This is especially the case in those homes, growing more numerous in town and country every year, that are heated by hot air furnaces, the heaters being in the cellar. Where there is furnace

heating it is imperative to best results, that the vegetable apartment be separated from the warmer parts by a wall and tight doors, together with ample means for ventilation through windows and otherwise.

Winter Leisure. There is leisure now for studying books, catalogues, and back numbers of periodicals, for forming a wider acquaintance with garden subjects. Not only is this a delightful task, but it is time well spent always, to enlarge one's knowledge of varieties. Particularly is this true of seeds, plants and trees in the ornamental line, for here it may well be said that we have the flora of all lands to select from. While a universal knowledge of flowers that are suited to culture is a subject beyond the longest life to fully compass, yet any steps taken in enlarging our acquaintance with foreigners and their adaptability to culture with us, is sure to be rewarded with delight. Even in distant parts of our own land there are native kinds, which now are offered in the catalogues, and whose acquaintance is well worth counting. Then why not make a special study of the flora of our new territorial possessions?



TRUE CANNIBALISM.

A POPLAR TREE FEEDING UPON ITSELF.

Trenching the garden soil can usually be done to advantage in the winter. No operation is attended with more satisfactory results. If you cannot trench the entire plat, trench part of it—in time you may get over the whole area. Trenching refers to turning over the soil two spades deep and incorporating some manure the entire depth. It does not imply that the subsoil should be brought to the top and the surface soil take its place, although this rule slightly observed is of some advantage. In the operation a trench two feet wide and one spade deep, is thrown out at one side of the plot. The lower soil thus exposed in the trench is then turned over with the spade, mixing some manure with it as in ordinary spading. Then trench number two is opened beside the first one, the top soil of which is thrown over in the subsoil of trench one, and the subsoil of trench two is worked over, and so on across the plot; finishing by conveying the surface soil thrown from trench one over into the last trench made.

A Queer Tree Freak. Recently the writer met a singular case of tree propagation and can-

nibalism, as perhaps it might be styled, the subject being that of a roadside poplar tree. At some time in the past a leading branch of the tree had split off, the scar of which later developed into a hollow recess. In the bottom of this recess there was a mass of decayed wood and other matter, and which seems to have been in a moist state much of the time. The fact that the opening faced northward prevented the sun from drying out the mold, moistened by every rain, within the trunk. Notwithstanding the large wound, this tree otherwise grew thrifly. The result of this was that all around the wound there was a surface of young and tender bark and extending even into and against the accumulated damp and sometimes wet mold within. The effect of the close contact of constantly moist substance on the young, tender bark was that at one point it caused the surface to form callous, and actually induced the throwing out of roots into the mold, a kind of air-layering as it might be termed. Adventitious buds had also started into upward growth, with the result that, at the time the writer saw the tree there were several poplar shoots, with roots of their own, growing out of the hollow space, as shown in the engraving. Thus the parent tree, was nursing within its own bosom two direct offspring, from itself, in fact a part of itself, and deriving sustenance from the vitals of the tree, which had been turned into plant food. It is possible that leaves had at times lodged in the opening of the tree and added their share to the plant food that later sustained the sprouts illustrated. What the future of these shoots will be is not certain. It cannot be possible for the roots to make any considerable growth in their very limited quarters, and no doubt they will soon die. As the young shoots really proceed from the tree they will continue to be supported as regular branches. On the whole, the case struck the writer as being so remarkable as to be worthy of mention in these columns.

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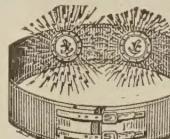


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A TRIBUTE FROM KANSAS.

It is with some hesitancy and trepidation I address you, as I fear I can not make my thoughts clear. From early childhood I have been a reader of Vicks' publications. As one has loved a schoolmate, have I the same deep affection for these household idols. My father was a subscriber to the MAGAZINE from the time it first started, and the beautiful colored plates in Vicks MAGAZINE of the first series, are as vivid in my mind today as when a young child I pored over them thinking them the loveliest things on earth. If it did not seem a sacrifice to mutilate a magazine the fine art pictures on the front page could be mounted that now appear, and are handsome enough for any parlor.

My father was Dr. Charles Williamson, formerly a member of the State Horticultural Society of the State of Kansas.

This is the home of the wild raspberries. Thirty years ago when my father first settled here this fruit was found in abundance along the south banks of deep ravines and sometimes in the open timber. Yet the habits of this plant seemed to favor the ravines which might properly be called a run because living springs of water always kept the ground moist no matter how great the drought.

Prairie fires, so common in earlier years, were destructive to this tenacious plant. Yet nature took this way to prune out the old stalks and in two years a new crop of delicious berry was ready for picking. I wish I had time to tell of all the new plants we found here and of wonders that do not exist now and which have disappeared in the short space of thirty years.

Blue-stem grass grew higher than the horses' backs, and children played hide and seek in it just as they have many a time in a field of grain. To view such luxuriant growth is it any wonder that the country has become so thickly settled in so short a time—our far-famed drouths notwithstanding.

Hoping that Vicks' Jubilee Year may be grand and glorious, I remain respectfully MRS. M. A. C.

++

A FLORICULTURAL GRIEVANCE.

I should like to have space given me to air a floricultural grievance which has weighed upon my soul for thirty or forty years. Without being a scientific person I have been a lover of plants all my life and from the age of fifteen have taken enough interest in botany to appreciate the convenience of the current use of botanical terms, especially names of plants. I have seen mention made of the absurdity of the common names given to plants, and have met with my share of them, the most notable being that of a tradescantia, Wandering Jew, which was called "green corn geranium!" A person without any practical knowledge of botany might have intelligence enough to discern that a geranium and "corn" both indicate families of plants that have no connection with each other, and when they are combined to name a plant which belong to neither family, it seems as if the height of absurdity had been reached. My special grievance is the name calla lily. With the exception that the callas and lilies are both endogenous plants, they have nothing in common, and to a botanist the name is as absurd as that of green corn geranium. We might just as well call them calla cabbages or calla palms or calla potatoes or calla roses.

I can nerve myself with scorn enough for the botanical ignorance of the masses, to hear them speak of calla lilies without making a protest, but, what aggravates my botanical distress, subjecting me to inward groans, to which those of the bottomless pit are but faint whispers, is that experienced floriculturists' and botanists' periodicals never correct this abuse of exact language. More than that, they even encourage it, either by falling into the practice when they know better, using the name with editorial sanction themselves, or allowing contributors or correspondents to use it in their columns. I have never read one such journal that has not sinned in this respect, and I have read some of the largest standing and greatest authority.

As I have passed my three-score milestone I do not expect to live long enough to see this vile habit abolished, but I do expect that one of the items in the happiness of my life hereafter will be the fact that I have registered one "kick" against it. E.

Geneva, Ill.

**

100,000 new subscribers for this MAGAZINE in 1899. Will you help in this effort?

COMMENTS.

ANNENT the new vegetable, *Ornithogalum pyreniacum*, noticed in the MAGAZINE for November, I find this passage in Lindley's *Treasury of Botany*: "Prussian asparagus which is brought to the markets in Bath, (England), is not a species of asparagus at all, but consists of the spikes when about eight inches long, of *Ornithogalum pyreniacum*, which grows abundantly in hedges and pastures in that locality." As this work is dated 1865, the vegetable is not so new as it might be. But with all these years of use behind it, it is more likely to succeed than if really new.

The bulbs of the Star of Bethlehem, *O. umbellatum*, are boiled and eaten in Palestine, etc., and always have been; they are said to be the dove's dung of Scripture. They are said to be very wholesome and nutritious.

The writer of the very interesting "Wild Flowers of Bulgaria," asks: "Who has ever thought of admiring the Sorrel?" (Rumex.) I have, and not only thought of it, but have actually done so, both as regards individual plants and the broad red patches on the side or summit of some wind-swept knoll, the photograph of a hole in the wheat or clover caused by winter killing, (on some other fellow's land of course.) The tall plume heads fifteen or more inches high are interesting and pretty to me at least. The seedsman, Burpee, sent out a Rumex a few years ago of the sorriest foliage, whose flowers very small and insignificant were followed by hundreds of huge triangular capsules of a reddish tint. It was very curious and even pretty, but I guess it has dropt out. I cannot recall Burpee's name for it. Miss Edith Thomas speaks of "the dull red flame" of the sorrel from which I infer that she too admires it.

E. S. GILBERT.

**

DOUBLE FLOWERED WHITE CAMPION.

The *Florists' Review* says: There is seldom an abundance of white flowering plants during the hot months, as their flowers are much wanted for made up work, balsams with many being the stock in trade. There are many things, however, which furnish white flowers in abundance, and I know of none better than the double flowered white campion, *Lychmis vespertina plena*. It used to be a plant much prized in Europe where great attention was paid to its cultivation when it was rarer than it is now. The principal point in its culture is to let the plants get sufficiently well established before allowing them to flower, else there is a danger of their flowering themselves to death. The flowers are as large as those of the double balsam, the petals are close together, making it very desirable for making up. It used to be thought that divisions of the crowns or cuttings of the tender shoots soon after the plants began growing, were the only methods of propagation, but somebody hit upon the plan of root cuttings by which method it is very easily got up. The plants should be lifted before growth begins, and the large roots cut into pieces scattered over the surface of a box containing soil and covered to a depth of about an inch. They will sprout in a short time, when they can be potted off afterward, planting out in rows.

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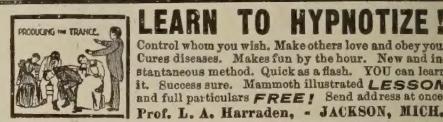
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THE ANSWER OF THE LILIES.

Pale lily blossoms, toward the sun that reach,
I wait to learn the mystic truths you teach.
O, do you whisper legends of delight,
Or sing of pleasures evanescent, bright?
What wisdom guides you? Now to me impart;
I have no knowledge equal to your art.
O, lily blossoms, dimly I can hear
The language spoken to the spirit ear,
The mystic tongue, that every life within,
Makes bird and beast and plant and human kin;
And while I listen, weave a magic spell,
That what I hear I may unaltered tell.
Pale lily blossoms, this your sole reply;
"We must reach up, else surely we shall die;
We know but this, it is the Father's will,
Though well the moist and tender earth we love,
We perish but for sunshine from above.

LALIA MITCHELL.

**

ICE ON THE FARM.

Wherever practicable, farmers will find it profitable to secure a supply of ice to last through the coming summer. Those who have never tried the experiment of housing a few tons of ice should take advantage of this opportunity. If not equipped with ice cutting tools do not be entirely discouraged. With two or three cross-cut saws, an ax or a pointed bar, a few ice hooks and ice tongs, it is possible, though with the sacrifice of some convenience, to secure the crop for this year. A more extended "kit" of ice tools is desirable and profitable, but their absence for one season may be endured.

The standard size of an ice cake is 22 x 22 inches. Lay out the storage house on this scale, allowing one inch between the sides of ice cakes and a foot all around between the ice and walls, to be packed with sawdust, chaff or other non-conducting filling. Fifty cubic feet of house room will represent a ton of ice. Have the floor level or sloping one inch in six feet toward the center. A trench 4 x 4 inches, filled with coarse gravel, through the center of the floor, will answer for a drain. See that surface water is thoroughly conducted away from around the house and arrange a trap at the outlet of the drain to prevent entrance of any air. Keep the ice as dry as possible. Air currents through the ice, or dampness, wastes the ice.

Double walls lined with paper on both sides of the studs and packed with non-conducting material are desirable. With twelve inches of inside packing, the studs may be 4 x 4 inch pine, sixteen in centers, for a room to hold fifty tons, say built of fourteen foot lumber. Built on solid ground; the drain is essential on clay, but on gravel may be omitted, if a deep trench is dug all around the house and provided with a good outlet. When the house is full, cover the top of the ice with marsh hay or rye straw at least eighteen inches deep. Have a gabled roof with wide eaves and a small slatted ventilator in each end. Place a vestibule over the entrance on north end to prevent entrance of warm air when taking out ice in warm weather. Give the house a thorough coat of whitewash; it helps to preserve the ice.

Once tried, and the advantages of a supply of ice in hot weather are experienced, it will become a permanent rule to harvest ice every winter. A systematic course can then be followed and the use of labor saving tools and methods which expedite the work employed. While securing the ice is the chief consideration, no one should be content with anything short of the best methods attainable; this is a necessity during mild winters, when the crop must be secured speedily or not at all.—*THERON L. HILES, in American Agriculturist.*

FEEDING GROWING CHRYSANTHEMUMS.

The use of liquid manure in raising chrysanthemums is the established practice among gardeners; and, besides, many mulch the soil with cow manure that the nutriment carried down in watering may push a strong growth of the plants. Mr. W. J. Bell, writing recently in the *Florists' Review*, gives his method of treatment, which, it will be seen, is quite at variance with the usual practice:

I have in former communications had something to say on the subject of feeding chrysanthemums, and after another season's experience I wish to allude to it again. The experts tell us that at such a period of their growth we should commence to apply liquid manure to our plants, and give minute directions in regard to the various kinds of stimulants, their proper rotation, quantity and manner of using and how late to continue the dosing. These operations are not very pleasant and are, I think, largely unnecessary. For the last two years or more we have given our chrysanthemums absolutely no feeding whatever, other than that contained in the four inches of fresh good soil, and the ordinary city water, not even mulching the surface of the bed with manure.

The plants make a strong, healthy growth, with fine foliage and flowers quite large enough for our purpose, with stronger stems than those that have acquired indigestion through too much stall feeding. I measured some of the kinds today (Nov. 25), after many of the largest flowers had been cut, with the following results, measurements being diameter directly across the flower, not as is usual beginning at the bottom of one side thence over the crown to the bottom of the other side: Mrs. Perrin, five inches; F. Waix, five and one-half inches; Lincoln, Mutual Friend, Daileldouze, Wanamaker and Mrs. Jerome Jones, six inches; Maud Dean, seven inches, and V. Morel, eight inches. We get firm, bright-colored flowers by our method, and will continue it. Those who want larger flowers and the additional labor and stench are welcome to it.

Our amateur readers must bear in mind that "fresh good soil," mentioned above is not any ordinary garden soil. It is a soil carefully prepared by compacting the upper layer of soil and sod from an old pasture with well-rotted stable

manure, in the proportion of one of manure to three of soil, or many prefer half rotted cow manure in a somewhat larger proportion, and all piled together for six or eight months, and turned and mixed at least twice in the meantime; then when used a small quantity of bone meal may or may not be added, and if the soil is very heavy a small amount of sand is used, enough to keep the whole compost loose. So, it will be readily seen that this "fresh good soil" is really a rich compost. Chrysanthemums must have a substantial soil to produce first-class, satisfactory plants, but if the whole work of applying liquid manure can be avoided without loss of result it will be a decided advantage.

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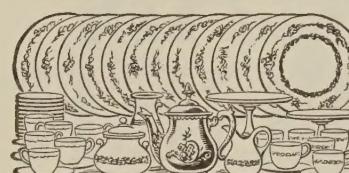
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CHEAP AND DURABLE TRELLISES.

THE Rambler roses were set behind the heavy blocks of sandstone forming a bank wall or terrace, and then, what could they climb upon? So I took a quarryman's drill and sunk holes in the stone some six feet apart, three or four inches deep. Then I got the worn out tire from a light buggy in pieces six feet long, put one end in the holes bending the upper ends together and winding them with stout wire, making a semicircular arch, pounding in small irons until the tire was tight in the holes. Stout fence wire was now woven in, making meshes of various sizes and sorts. I knew it would look less dreadful when covered with vines, so I paid small attention to trifles. You can run the wire through the old bolt holes if they come handy, but the wire will hold if merely put round the tire, if drawn tight and held by the interwoven strands. Thus you can make strong and permanent structures at very small cost. Old tire accumulates on every farm and may be had of any blacksmith or junk dealer. Simply driven into solid ground, such trellises might do very well, stones of course are better.

E. S. GILBERT.

* *

NOTES.

I received last June from James Vicks Sons a package of plants which included three chrysanthemums—Mrs. E. D. Adams, Louis Boehmer and E. G. Hill. It was so late I expected nothing of them this year, but set them in a box a foot square. I put them in rich soil and set in warm, sunny place, watering freely. I pinched them back only twice, as it was quite late. Louis Boehmer grew very rank and thrifty and

gave a good number of large, beautiful silvery pink blossoms in October and until November 15th. It is not large, but a clear beautiful yellow that is exceedingly lovely. But it is of Mrs. E. D. Adams that I wish to say most. The description in catalogue captivated me, and it was entirely true. This plant, obtained so late and never disbudded at all, gave me great beautiful, white flowers almost eight inches in diameter. It bloomed the entire month of November, and with its lovely ribbon-like petals so curiously swirled, was indeed a fascinating flower.

In the same package was a Madame Bruant geranium. Thirty cents seemed quite a price to pay for a little plant but it had nice, long roots, and when, in about six weeks from the time it was potted, it opened the first of a cluster of its lovely blossoms, a dollar would not have bought it. The buds kept coming, but I kept pinching them off and now it is a large thrifty well-branched bush, in shape to give a mass of bloom when next it buds.

I kept the withered bloom and seed pods cut from my hardy garden pinks, and they bloomed until frozen solid in the fall, while those in neighboring gardens were a mass of unsightly pods, and yellow foliage after July.

Thrifty hollyhocks cut back will give a second crop of bloom late in fall.

In this locality the stoutest thriftest sweet peas are those sown in the winter. December or January is the best time, so they will not come up until spring.

E. B. F.

Oregon.

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A Book that every patriotic American should have. Contains a full account of the "Fall of the Alamo." Printed on good paper and illustrated by numerous photographs, one of the most interesting being a photo of the Alamo building, showing the fight at its hottest stage, when the building was attacked by 10,000 Mexicans to capture and put to death 175 brave Americans, but which was not accomplished until after two weeks' fighting, and then at a loss of 2,000 Mexicans, a defense scarcely paralleled in history. The fall of the Alamo will always be remembered by loyal Americans. This book fosters patriotism and a love for heroic characters. An ideal present for a boy. Price 25 cts. Address ISAAC MOTES, Dallas, Tex.

TO DESTROY MOLES.

A correspondent of the *National Stockman* gives the following advice about destroying moles: "Two cents worth of strychnine in a teacup of corn and water, let soak a day or so, go over the infested ground, drop a few grains in a place. I use my finger to make sure the corn gets to the bottom of the run; close the ground over to darken. Repeat in a few days if you fail to get all the first time."

* *

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